



A.D. 1856 N° 2842.

S P E C I F I C A T I O N

OF

GEORGE JULIUS VERTUE.

DEODORIZING SEWAGE WATERS, &c.

L O N D O N :

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY :

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,

25, SOUTHAMPTON BUILDINGS, HOLBORN.

Price 3d.

1857.



A.D. 1856 N° 2842.

Deodorizing Sewage Waters, &c.

LETTERS PATENT to George Julius Vertue, of Northam, in the Town and County of the Town of Southampton, Merchant's Clerk, for the Invention of "AN IMPROVEMENT IN DEODORIZING SEWAGE WATERS AND SEWAGE MATTER WHEN LIME IS USED."

Sealed the 8th May 1857, and dated the 1st December 1856.

PROVISIONAL SPECIFICATION left by the said George Julius Vertue at the Office of the Commissioners of Patents, with his Petition, on the 1st December 1856.

I, GEORGE JULIUS VERTUE, of Northam, in the Town and County of the
5 Town of Southampton, Merchant's Clerk, do hereby declare the nature of the Invention for "AN IMPROVEMENT IN DEODORIZING SEWAGE WATERS AND SEWAGE MATTER WHEN LIME IS USED," to be as follows:—

As lime is my principal agent used for the purpose, it is essential that a kiln should be erected at a convenient spot contiguous to the sewer pumping
10 station, drain, or wells, through which the sewage matter passes; the lime to be used hot from the kiln, and placed in a tank or vessel in which works an agitator driven by steam power or otherwise. A stream of hot or cold water is led into the tank in sufficient quantities as to bring the lime into a perfectly liquid form; the lime solution is then led through pipes (regulated by cocks
15 or valves) into the sewers, and thus, mixing by its own gravitation with the sewage matter, purifies it, and renders it quite inoffensive and non-injurious to the neighbourhood of the outfall or outlet of the sewers.

Vertue's Improvement in Deodorizing Sewage Waters, &c. when Lime is used.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said George Julius Vertue in the Great Seal Patent Office on the 29th May 1857.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, **GEORGE JULIUS VERTUE**, of Northam, in the Town and County of the Town of 5 Southampton, Merchant's Clerk, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the First day of December, in the year of our Lord One thousand eight hundred and fifty-six, in the twentieth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said 10 George Julius Vertue, Her special licence that I, the said George Julius Vertue, my executors, administrators, and assigns, or such others as I, the said George Julius Vertue, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, 15 exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "**AN IMPROVEMENT IN DEODORIZING SEWAGE WATERS AND SEWAGE MATTER WHEN LIME IS USED;**" upon the condition (amongst others) that I, the said George Julius Vertue, my executors or administrators, by an instrument in writing under my, or 20 their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said George Julius Vertue, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof, that is to say:—

As lime is my principal agent used for the purpose, it is essential that a kiln 30 should be erected at a convenient spot contiguous to the sewer pumping station, drain, or wells, through which the sewage matter passes; the lime to be used hot from the kiln, and placed in a tank or vessel in which works an agitator driven by steam power or otherwise. A stream of hot or cold water is led into the tank in sufficient quantities as to bring the lime into a perfectly 35 liquid form; the lime solution is then led through pipes (regulated by cocks or valves) into the sewers, and thus, mixing by its own gravitation with the sewage matter, purifies it, and renders it quite inoffensive and non-injurious to the neighborhood of the outfall or outlet of the sewers.

Vertue's Improvement in Deodorizing Sewage Waters, &c. when Lime is used.

And in order that my said Invention may be most fully understood and readily carried into effect, I will proceed to describe more fully the manner in which I prefer to conduct the process over the sewer through which the sewage to be deodorized passes, and at a short distance from the mouth of the said
5 sewer a circular vessel of wood or other material is erected, and in the centre of this vessel is placed an upright shaft, having on it stirring arms, which when the shaft revolves sweep the whole surface of the vessel at a short distance from its bottom. To the vessel thus arranged a pipe leads in a continuous stream of water, and there is another pipe which leads the water after
10 it is mixed with the lime into the sewer through which the sewage is passing. By the side of the mixing vessel there are lime kilns, in which the lime required for the process is burnt, and from one of these kilns a workman continually takes quantities of the lime, while it is still hot from the burning, and throws it into the mixing vessel, where it becomes mixed with the water also
15 introduced into the mixing vessel. Or, if sea water can be obtained, I find it advantageous to use it in place of fresh water for mixing with the lime.

The quantity of lime which is necessary to deodorise a measure of sewage will vary; but I find it generally advisable to employ the lime in the proportion of twenty-six tons of lime per annum for every one thousand persons
20 of the population of the locality drained by the sewer.

Having thus described the nature of my Invention, and the manner of performing the same, I would remark that I am aware that lime has heretofore been mixed with sewage for the purpose of deodorising the same, I do not therefore claim the same generally; but what I do claim is, the mixing the lime
25 while it is still hot from the burning with water and then adding the mixture to the sewage to be deodorised.

In witness whereof, I, the said George Julius Vertue, have hereunto set my hand and seal, this Twenty-eighth day of May, in the year of our Lord One thousand eight hundred and fifty-seven.

30

GEO. J. VERTUE. (L.S.)

Witness,

F. R. WITHERS,

Solicitor,

Southampton.

LONDON:Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1857.

